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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/966,914	09/27/2001	Sehat Sutardja	MP0115	5719
23624 7590 10/06/2003				
MARVELL SEMICONDUCTOR, INC. INTELLECTUAL PROPERTY DEPARTMENT 700 FIRST AVENUE, MS# 509 SUNNYVALE, CA 94089				
EXAMINER WILLIAMS, ALEXANDER O				
ART UNIT 2826		PAPER NUMBER		

DATE MAILED: 10/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	Applicant(s)	
09/966,914	SUTARDJA	
Examiner	Art Unit	
Alexander O Williams	2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 July 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) 5, 6, 9, 10, 17, 18, 21 and 26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7, 8, 11-16, 19, 20, 22-25, 27 and 28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7/14/03.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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Serial Number: 09/966914 Attorney's Docket #: MP0115

Filing Date: 9/27/01;

Applicant: Sutardja

Examiner: Alexander Williams

Applicant's Amendment filed 7/7/03 is acknowledged.

This application contains claims 5, 6, 9, 10, 17, 18, 21 and 26 drawn to an invention non-elected without traverse in Paper No. 5.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1 to 4, 7, 8, 11, 13 to 16, 19, 20, 22 to 25, 27 and 28 are rejected under 35 U.S.C. 102(e) as being anticipated by Akram (U.S. Patent # 6,424,033 B1).

For example, in claim 1, Akram (**figures 11 and 12**) specifically figure 12 show an integrated chip package **1010**, comprising: at least one semiconductor chip **40** having a first surface and a second surface; an intermediate substrate **912** electrically coupled via conductive bumps **26** to the first surface of the least one semiconductor chip; a planar package substrate **914** having a first surface electrically coupled to the intermediate substrate via a plurality of bonding wires (**318 shown in figure 12**), the intermediate substrate arranged above the planar package substrate; and a heat sink **924** having side portions extending towards the planar package surface, the heat sink thermally coupled to the second surface of the semiconductor chip so that heat generated from the at least one semiconductor chip flows towards the heat sink.

Claim 12 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Akram (U.S. Patent # 6,424,033 B1) in view of Degani et al. (U.S. Patent # 5,869,894).

Akram show the features of the claimed invention detailed above, but fail to explicitly show a support material arranged between the package substrate and the intermediate substrate.

Degani et al. is cited for showing a RF IC package. Specifically, Degani et al. (**figures 2 and 3**) discloses a semiconductor chip **13** having a first surface and a second surface; an intermediate substrate **14** electrically coupled via conductive bumps **16** to the first surface of the least one semiconductor chip; a package substrate **19**

having a first surface electrically coupled to the intermediate substrate; and a support material arranged between the package substrate and the intermediate substrate for the purpose of preventing chips noise problems that frequently arise due to interconnects that are long or ineffectively placed.

Therefore, it would have been obvious to one of ordinary skill in the art to use Degani et al.'s support material to modify Akram's package for the purpose of preventing chips noise problems that frequently arise due to interconnects that are long or ineffectively placed.

Response

Applicant's arguments filed 7/16/03 have been fully considered, but are moot in view of the new grounds of rejections detailed above.

The listed references are cited as of interest to this application, but not applied at this time.

Field of Search	Date
U.S. Class and subclass: 257/686,685,723,777,778,737,738,734,712,704,710,717, 720,532,724,728,725	7/26/02 3/2/03 9/26/03
Other Documentation: foreign patents and literature in 257/686,685,723,777,778,737,738,734,712,704,710,717,7 20,532,724,728,725	7/26/02 3/2/03 9/26/03
Electronic data base(s): U.S. Patents EAST	7/26/02 3/2/03 9/26/03

Papers related to this application may be submitted to Technology Center 2800 by facsimile transmission. Papers should be faxed to Technology Center 2800 via the Technology Center 2800 Fax center located in Crystal Plaza 4-5B15. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Technology Center 2800 Fax Center number is (703) 308-7722 or 24. Only Papers related to Technology Center 2800 APPLICATIONS SHOULD BE FAXED to the GROUP 2800 FAX CENTER.

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Any inquiry concerning this communication or any earlier communication from the examiner should be directed to **Examiner Alexander Williams** whose telephone number is **(703) 308-4863**.

Any inquiry of a general nature or relating to the status of this application should be directed to the **Technology Center 2800 receptionist** whose telephone number is **(703) 308-0956**.

9/27/03

A handwritten signature in black ink, appearing to read 'A. Williams', with a long, sweeping horizontal stroke extending to the right.

Primary Examiner
Alexander O. Williams